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EXAMINER	
LOVEL, KIMBERLY M	
ART UNIT	PAPER NUMBER
2167	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@dcpatent.com

Office Action Summary	Application No.	Applicant(s)	
	10/506,634	FLANAGAN, ADRIAN	
	Examiner	Art Unit	
	KIMBERLY LOVEL	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _28 August 2009_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _13-36_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _13-36_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 13-36 are currently pending. In the Amendment filed 28 August 2009, claims 13, 24m 25-28, 35 and 36 are amended.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 August 2009 has been entered.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification fails to define the term computer-readable medium.

35 USC § 101 - Clarifications

4. Claims 26-36 are directed towards an apparatus comprising a processor. The processor is construed as representing the necessary hardware required to constitute a machine or manufacture within the meaning of 35 USC 101. The claimed computer readable medium is construed as being limited to statutory embodiments, which meet the requirements of 35 USC 101.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. The rejections of **Claims 13-24** under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter are withdrawn as necessitated by Amendment.

7. **Claim 25** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

8. **Claim 25** is directed towards an apparatus. However, it is noted that the use of the word “apparatus” does not inherently mean that the claim is directed towards a machine or article of manufacture. Each means of the claimed apparatus can be interpreted as comprising entirely of software per se according to one of ordinary skill in the art. Therefore, the claim language fails to provide the necessary hardware required

for the claim to fall within the statutory category of an apparatus.

According to MPEP 2106:

> The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

9. To allow for compact prosecution, the examiner will apply prior art to these claims as best understood, with the assumption that applicant will amend to overcome the stated 101 rejections.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 13-20 and 24-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 6,226,408 to Sirosh (hereafter Sirosh) in view of US Patent No 6,260,036 to Almasi et al (hereafter Almasi).

Referring to claim 13, Sirosh discloses a method, comprising:

determining cluster centers in a first data structure, wherein the first data structure comprises a lattice structure of weight vectors that create an approximate representation of a plurality of input data points (see Fig 2); and

wherein a plurality of the weight vectors represents a single non-linear cluster (see column 4, lines 7-20);

performing, by the apparatus, a first iterative process with iterations for determining a weight vector for each data point and then updating each of the weight vectors such that the weight vectors move toward the cluster centers (see column 4, line 64 – column 5, line 22);

performing, by the apparatus, a second iterative process with iterations each including updating a second data structure [next layer] utilizing results of the iterative updating of the first data structure [takes as its input a set of vectors from the one previous layer] (see column 4, lines 57-63 and column 5, lines 23-31); and

determining, by the apparatus, based on the second data structure, several sets of weight vectors in said lattice structure such that in each set, the weight vectors correspond to the same cluster centers of the input data points [Batch Neural Gas takes into account the location of all input vectors when updating the cluster centers] (see column 6, line 22 – column 7, line 33),

wherein the method is an unsupervised method that is configured to be suitable for an on-line system [unsupervised] (see column 3, lines 22-28).

Sirosh fails to explicitly disclose the interleaving of the first process with the second process through the step of updating a first coefficient. Almasi discloses using a self-organizing map with data clustering (see abstract), including the further limitations of performing a first iterative process with iterations each including determining a winner weight vector for each data point [winning or best-matching] and then updating each of

the weight vectors with a corresponding first coefficient updated in a second process such that the weight vectors move toward the cluster centers and performing the second iterative process with iterations each including updating said corresponding first coefficient in a second data structure by utilizing the winner weight vector determined in the first iterative process [the steps are recursive] (see column 4, lines 28-67 and Fig 4).

It would have been obvious to one of ordinary skill in the art to apply the step of recursively updating the weight vectors to the vectors of Sirosh as is disclosed by Almasi. One would have been motivated to do so in order to increase the efficiency of the system through the steps of learning.

Referring to claim 14, the combination of Sirosh and Almasi (hereafter Sirosh/Almasi) discloses the method according to claim 13, the winner weight vector for each data point is determined on the basis of the distance between the data point and the weight vectors, and each iteration in the first process further includes calculating a next value for each weight vector on the basis of the current value of the weight vector and a first neighborhood function of the distance on the lattice structure between the weight vector and the winner weight vector, and wherein each iteration in the second iterative process further includes calculating a next value of each of the first coefficients based on: the current value of the each first coefficient, and a combination of a first coefficient of the winner weight vector, a second neighborhood function of the distance on the lattice structure between the weight vector and the winner weight vector, and an adjustment factor for adjusting convergence speed between iterations (Sirosh: see column 6, lines 46 – column 7, line 42; Almasi: see column 4, lines 28-67 and Fig 4).

Referring to claim 15, Sirosh/Almasi discloses the method according to claim 13, wherein the determining the weight vectors that correspond to cluster centers comprises selecting local maxima in the second data structure [ranking] (Sirosh: see column 7, lines 1-42).

Referring to claim 16, Sirosh/Almasi discloses the method according to claim 14, wherein the combination is or comprises multiplication (Sirosh: see column 6, lines 46 – column 7, line 42).

Referring to claim 17, Sirosh/Almasi discloses the method according claim 14, wherein the second neighborhood function is not monotonous (Sirosh: see column 9, lines 6-20).

Referring to claim 18, Sirosh/Almasi discloses the method according to claim 14, wherein the first coefficients are limited to a range [0,1] and the second neighborhood function gives negative or positive values, respectively, for some distances (Sirosh: column 9, line 59).

Referring to claim 19, Sirosh/Almasi discloses the method according to claim 14, wherein the second neighborhood function depends on a number of prior iterations (Sirosh: see column 9, lines 18-20).

Referring to claim 20, Sirosh/Almasi discloses the method according to claim 13, wherein the input data points represent real-world quantities [real-world data] (Sirosh: see column 5, lines 52-58).

Referring to claim 24, Sirosh discloses a computer-readable program product comprising a computer program code embodied on a computer-readable medium, the

computer readable program code when executed by a processor causes an apparatus to perform at least the following::

determining cluster centers in a first data structure, wherein the first data structure comprises a lattice structure of weight vectors that create an approximate representation of a plurality of input data points (see Fig 2); and

wherein a plurality of the weight vectors represents a single non-linear cluster (see column 4, lines 7-20);

performing, by the apparatus, a first iterative process with iterations for determining a weight vector for each data point and then updating each of the weight vectors such that the weight vectors move toward the cluster centers (see column 4, line 64 – column 5, line 22);

performing, by the apparatus, a second iterative process with iterations each including updating a second data structure [next layer] utilizing results of the iterative updating of the first data structure [takes as its input a set of vectors from the one previous layer] (see column 4, lines 57-63 and column 5, lines 23-31); and

determining, by the apparatus, based on the second data structure, several sets of weight vectors in said lattice structure such that in each set, the weight vectors correspond to the same cluster centers of the input data points [Batch Neural Gas takes into account the location of all input vectors when updating the cluster centers] (see column 6, line 22 – column 7, line 33),

wherein the method is an unsupervised method that is configured to be suitable for an on-line system [unsupervised] (see column 3, lines 22-28).

Sirosh fails to explicitly disclose the interleaving of the first process with the second process through the step of updating a first coefficient. Almasi discloses using a self-organizing map with data clustering (see abstract), including the further limitations of performing a first iterative process with iterations each including determining a winner weight vector for each data point [winning or best-matching] and then updating each of the weight vectors with a corresponding first coefficient updated in a second process such that the weight vectors move toward the cluster centers and performing the second iterative process with iterations each including updating said corresponding first coefficient in a second data structure by utilizing the winner weight vector determined in the first iterative process [the steps are recursive] (see column 4, lines 28-67 and Fig 4).

It would have been obvious to one of ordinary skill in the art to apply the step of recursively updating the weight vectors to the vectors of Sirosh as is disclosed by Almasi. One would have been motivated to do so in order to increase the efficiency of the system through the steps of learning.

Referring to claim 25, Sirosh/Almasi discloses an apparatus, comprising:

first determination means for determining cluster centers in a first data structure, wherein the first data structure comprises a lattice structure of weight vectors that create an approximate representation of a plurality of input data points (see Fig 2); and

wherein a plurality of the weight vectors represents a single non-linear cluster (see column 4, lines 7-20);

first performing means for performing, by the apparatus, a first iterative process with iterations for determining a weight vector for each data point and then updating

each of the weight vectors such that the weight vectors move toward the cluster centers (see column 4, line 64 – column 5, line 22);

second performance means for performing, by the apparatus, a second iterative process with iterations each including updating a second data structure [next layer] utilizing results of the iterative updating of the first data structure [takes as its input a set of vectors from the one previous layer] (see column 4, lines 57-63 and column 5, lines 23-31); and

second determination means for determining, by the apparatus, based on the second data structure, several sets of weight vectors in said lattice structure such that in each set, the weight vectors correspond to the same cluster centers of the input data points [Batch Neural Gas takes into account the location of all input vectors when updating the cluster centers] (see column 6, line 22 – column 7, line 33),

wherein the method is an unsupervised method that is configured to be suitable for an on-line system [unsupervised] (see column 3, lines 22-28).

Sirosh fails to explicitly disclose the interleaving of the first process with the second process through the step of updating a first coefficient. Almasi discloses using a self-organizing map with data clustering (see abstract), including the further limitations of performing a first iterative process with iterations each including determining a winner weight vector for each data point [winning or best-matching] and then updating each of the weight vectors with a corresponding first coefficient updated in a second process such that the weight vectors move toward the cluster centers and performing the second iterative process with iterations each including updating said corresponding first

coefficient in a second data structure by utilizing the winner weight vector determined in the first iterative process [the steps are recursive] (see column 4, lines 28-67 and Fig 4).

It would have been obvious to one of ordinary skill in the art to apply the step of recursively updating the weight vectors to the vectors of Sirosh as is disclosed by Almasi. One would have been motivated to do so in order to increase the efficiency of the system through the steps of learning.

Referring to claim 26, Sirosh discloses an apparatus, comprising:

at least one processor; at least one memory including the program code, wherein the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

determine cluster centers in a first data structure, wherein the first data structure comprises a lattice structure of weight vectors that create an approximate representation of a plurality of input data points (see Fig 2); and

wherein a plurality of the weight vectors represents a single non-linear cluster (see column 4, lines 7-20);

perform a first iterative process with iterations for determining a weight vector for each data point and then updating each of the weight vectors such that the weight vectors move toward the cluster centers (see column 4, line 64 – column 5, line 22);

performing the second iterative process with iterations each including updating a second data structure [next layer] utilizing results of the iterative updating of the first data structure [takes as its input a set of vectors from the one previous layer] (see column 4, lines 57-63 and column 5, lines 23-31); and

determine based on the second data structure, several sets of weight vectors in said lattice structure such that in each set, the weight vectors correspond to the same cluster centers of the input data points [Batch Neural Gas takes into account the location of all input vectors when updating the cluster centers] (see column 6, line 22 – column 7, line 33),

wherein the method is an unsupervised method that is configured to be suitable for an on-line system [unsupervised] (see column 3, lines 22-28).

Sirosh fails to explicitly disclose the interleaving of the first process with the second process through the step of updating a first coefficient. Almasi discloses using a self-organizing map with data clustering (see abstract), including the further limitations of performing a first iterative process with iterations each including determining a winner weight vector for each data point [winning or best-matching] and then updating each of the weight vectors with a corresponding first coefficient updated in a second process such that the weight vectors move toward the cluster centers and performing the second iterative process with iterations each including updating said corresponding first coefficient in a second data structure by utilizing the winner weight vector determined in the first iterative process [the steps are recursive] (see column 4, lines 28-67 and Fig 4).

It would have been obvious to one of ordinary skill in the art to apply the step of recursively updating the weight vectors to the vectors of Sirosh as is disclosed by Almasi. One would have been motivated to do so in order to increase the efficiency of the system through the steps of learning.

Referring to claim 27, Sirosh/Almasi discloses the apparatus of claim 26, wherein the apparatus is further caused to: determine a winner weight vector for each data point on the basis of the distance between the data point and the weight vectors; calculate a next value for each weight vector on the basis of the current value of the weight vector and a first neighborhood function of the distance on the lattice structure between the weight vector and the winner weight vector; and calculate a next value of each of the first coefficients based on: the current value of the each first coefficient, and a combination of a first coefficient of the winner weight vector, a second neighborhood function of the distance on the lattice structure between the weight vector and the winner weight vector, and an adjustment factor for adjusting convergence speed between iterations (Sirosh: see column 6, lines 46 – column 7, line 42; Almasi: see column 4, lines 28-67 and Fig 4).

Referring to claim 28, Sirosh/Almasi discloses the apparatus of claim 27, wherein the apparatus is further caused to determine the weight vectors that correspond to cluster centers comprises selecting local maxima in the second data structure [ranking] (Sirosh: see column 7, lines 1-42).

Referring to claim 29, Sirosh/Almasi discloses the apparatus of claim 27, wherein the combination is or comprises multiplication (Sirosh: see column 6, lines 46 – column 7, line 42).

Referring to claim 30, Sirosh/Almasi discloses the apparatus according claim 27, wherein the second neighborhood function is not monotonous (Sirosh: see column 9, lines 6-20).

Referring to claim 31, Sirosh/Almasi discloses the apparatus according to claim 27, wherein the first coefficients are limited to a range [0,1] and the second neighborhood function gives negative or positive values, respectively, for some distances (Sirosh: column 9, line 59).

Referring to claim 32, Sirosh/Almasi discloses the apparatus according to claim 27, wherein the second neighborhood function depends on a number of prior iterations (Sirosh: see column 9, lines 18-20).

Referring to claim 33, Sirosh/Almasi discloses the apparatus according to claim 27, wherein the input data points represent real-world quantities [real-world data] (Sirosh: see column 5, lines 52-58).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. **Claims 21-23 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 6,226,408 to Sirosh in view of US Patent No 6,260,036 to Almasi et al as applied to claims 14 and 27 above, and further in view of US Patent No 5,809,490 to Guiver et al (hereafter Guiver).**

Referring to claims 21 and 34, Sirosh/Almasi fails to explicitly disclose the further limitation wherein the first data structure is or comprises a self-organizing map.

Guiver discloses an unsupervised clustering model which includes a first data structure (see abstract), wherein the first data structure is or comprises a self-organizing map (see column 7, lines 4-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the self-organizing map of Guiver as the type of first data structure disclosed by Sirosh/Almasi. One would have been motivated to do so since Sirosh discloses unsupervised clustering, and it is well-known to one of ordinary skill in the art that a self-organizing map is just one of many unsupervised clustering techniques.

Referring to claims 22 and 35, the combination of Sirosh/Almasi and Guiver (hereafter Sirosh/Almasi/Guiver) teaches estimating an upper limit K for a number of clusters in the self-organizing map (Guiver: see column 6, lines 8-11 "It also computes a cutoff level K in step 252. As previously indicated, the cut-off level K is selected as some fraction of the average number of examples per cluster such as 70%." Examiner interprets the "cutoff level" to be equivalent to the "upper limit" as described in the claim.);

defining a coefficient vector .THETA.i=(.theta..sub.i,1, .theta..sub.i,2, ...theta..sub.i,K) for each weight vector i in the self-organizing map, the coefficient vector comprising K second coefficients .theta..sub.i,l, each of which represents a weighting between the weight vector i and a label l (Guiver: see column 9, lines 48-53 "After weights of the neighboring neurons have been adjusted, the learning coefficient alpha is maintained or decreased over each iteration in step 194. For instance, alpha may start

at a value such as 0.4 and decrease over time to 0.1 or lower. Similarly, the neighborhood $N_{cicj}(t)$ is either maintained or shrunk in step 196."); and

assigning cluster label l to weight vector i if: l=arg max .theta..sub.i,k. 1.ltoreq.k.ltoreq.K (Guiver: see column 10, lines 27-30 "The Kohonen neuron with the minimum distance is called the winner and has an output of 1.0, while the other Kohonen neurons have an output of 0.0") - In the instant application, the cluster label l is referred to as the "winner".)

Referring to claims 23 and 36, Sirosh/Almasi/Guiver teaches the further limitation wherein each iteration in the second iterative process comprises calculating a next value of each second coefficient based on the current value of the second coefficient and a combination of: a coefficient of the winner weight vector, a third neighborhood function of distance (Guiver: see column 10, lines 6-12 "In each pass through the network, the node with a minimum distance between the input and its weight vector is considered the winner. Every node in the neighborhood is updated so that their weight vectors move toward the winner's vectors"); and

an adjustment factor for adjusting convergence speed between iterations (Guiver: see column 9 line 66 – column 10 line 2 "The neighbors of the winning neuron also adjust their weights to be closer to the same input data vector. The adjustment of neighboring neurons is instrumental in preserving the order of the input space in the SOM.")

Response to Arguments

14. Applicant's arguments with respect to the objection to the specification on pages 12-13 of the Remarks have been considered but are moot in view of the Amendment.

15. Applicant's arguments with respect to the 35 USC 101 rejections of claims 13-24 on pages 13-14 of the Remarks have been considered but are moot in view of the Amendment.

16. Applicant's arguments on page 14 of the Remarks in regards to the 35 USC 101 rejection of claim 25 have been fully considered but they are not persuasive. The Applicant states the following:

> Applicants respectfully submit that claim 25 recites statutory subject matter directed to a means-plus-function apparatus. Under MPEP 2016 II (c), where means plus function language is used to define the characteristics of a machine or manufacture invention, such language must be interpreted to read on only the structures or materials disclosed in the specification and "equivalents thereof" that correspond to the recited function. Two en banc decisions of the Federal Circuit have made clear that the USPTO is to interpret means plus function language according to 35 U.S.C. § 112, sixth paragraph. In re Donaldson, 16 F.3d 1189, 1193, 29 USPQ2d 1845, 1848 (Fed. Cir. 1994) (en banc); In re Alappat, 33 F.3d 1526, 1540, 31 USPQ2d 1545, 1554 (Fed. Cir. 1994) (en banc). Therefore, contrary to the examiner's conclusions, claim 25 is directed to statutory subject matter.

While under 112, sixth paragraph the means plus function has to be interpreted to read on the structures defined within the specification, the examiner has failed to find one of the claimed elements relating to a structure or element which includes a hardware embodiment. The Applicant has failed to point out which element includes hardware and where in the specification support can be found. Therefore, in light of the specification, each means can be interpreted as software per se.

17. Applicant's arguments on pages 15-18 with respect to the claims have been considered but are moot in view of the new ground(s) of rejection. The Applicant argues that Sirosh fails to teach the concept of interleaving the first process and the second process which is depicted in the amended limitation of "performing a first iterative process **with iterations each including determining a winner weight vector for each data point and then** updating **each of** the weight vectors **with a corresponding first coefficient updated in a second process** such that the weight vectors move toward the cluster centers; performing the second iterative process **with iterations each including** updating **said corresponding first coefficient** in a second data structure by utilizing **the winner weight vector determined in the first iterative process**." Almasi has been introduced in order to teach the concept of interleaving the first process with the second.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY LOVEL whose telephone number is (571)272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John R. Cottingham/
Supervisory Patent Examiner, Art Unit 2167

/Kimberly Lovel/
Examiner
Art Unit 2167

21 November 2009
/KL/